

## CLAIMS

What is claimed is:

- 5 1. A method for performing liquid chromatography-mass spectrometry on a chemical mixture comprising at least two prostaglandins, said method comprising:
- 10 a) performing a liquid chromatographic separation of said mixture, thereby generating an eluent;
- b) using sheath flow, adding a basic liquid to said eluent to generate a diluted eluent; and
- 15 c) performing mass spectrometry on said diluted eluent.
2. The method of claim 1, wherein said prostaglandins are PGD<sub>2</sub> and PGE<sub>2</sub>.
3. The method of claim 1, wherein performing said mass spectrometry comprises ionizing said diluted eluent by electrospray ionization.
4. The method of claim 1, wherein said liquid chromatographic separation is performed under acidic conditions.
- 20 5. The method of claim 1, wherein performing said mass spectrometry comprises performing tandem mass spectrometry.
6. The method of claim 5, wherein said tandem mass spectrometry comprises MS<sup>4</sup>.
- 25 7. A method for distinguishing between at least two prostaglandin isomers, comprising:
- a) performing tandem mass spectrometry on each isomer using a particular ionization energy to generate at least first and second mass spectra; and
- 30 b) varying said particular ionization energy so that said first and second mass spectra are significantly different from each other.

8. The method of claim 7, further comprising varying said particular ionization energy to determine an ionization energy at which said first and second mass spectra are approximately most different from each other.

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9. The method of claim 7, wherein said prostaglandin isomers are PGD<sub>2</sub> and PGE<sub>2</sub>.

10. The method of claim 7, wherein said tandem mass spectrometry is MS<sup>4</sup>.

11. The method of claim 7, wherein said tandem mass spectrometry is MS<sup>3</sup>.